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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,906	01/14/2004	Chris Andre Du Plessis	10908/8 (MAJR)	3086
757	7590	07/15/2005	EXAMINER	
BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60610			WYSZOMIERSKI, GEORGE P	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 07/15/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/756,906

Applicant(s)

DU PLESSIS, CHRIS ANDRE

Examiner

George P. Wyszomierski

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1742

1. Claim 4 (as presented in the listing of claims filed April 29, 2005) is objected to because the claim does not end with a period. Correction is required.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Emmett et al. (U.S. Patents 4,723,608, 4,974,816, or 5,007,620).

Each of the Emmett patents discloses a process that includes bioleaching to obtain a metal-containing slurry, performing some type of solid/liquid separation to form a material containing metal in solution and spent or partially spent micro-organisms, and separating these micro-organisms from the remaining material. The Emmett process may include both a plurality of bioleaching stages and separation stages (see Emmett '608 column 5, lines 5-13 and 38-57 and column 12, lines 23-68, and the examples disclosed in Emmett '816 or '620. The prior art further indicates recycling the micro-organisms back to one or more bioreactors. Separating by a centrifugal process is disclosed by Emmett '608 column 6, line 30, Emmett '816 column 8, line 8, or Emmett '620 column 8, line 37. Thus, all aspects of the claimed invention are held to be fully met by any one of the Emmett et al. patents.

Art Unit: 1742

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Emmett et al. '608, '816, or '620.

The Emmett patents, discussed supra, do not specifically recite the features as defined in the instant claims. However,

a) With respect to claims 6-8, the steps as recited in the instant claims are directed to nothing more than conventional methods of storing bacteria. One of ordinary skill in the art of bioreactors would have thus been motivated to include the claimed steps in the Emmett et al. processes, which require the use of certain bacteria in proper amounts at individual stages thereof.

b) With respect to claim 14, while the prior art does not specifically recite that cells are accumulated onto an inner surface of a membrane and removed by back flushing or washing, the prior art suggests that such a step may be included at Emmett column 11, line 55 thru column 12, line 4, Emmett '816 column 17, lines 15-32, or Emmett '620 column 16, line 55 to column 17, line 13.

Consequently, the disclosures of the Emmett et al. patents are held to create a prima facie case of obviousness of the presently claimed invention.

Art Unit: 1742

6. Claims 1-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication to Harrison et al.

Harrison discloses a two-stage bioleaching plant resulting in a biologically leached suspension of sulphidic, gold-bearing concentrate, which is then subjected to solid/liquid separation using a 2-stage hydrocyclone to separate the various materials therein. Bacteria from this process can then be recycled.

Harrison does not specifically mention that microbial cells (i.e. bacteria) are separated from metal in the supernatant. However, because the bacteria clearly can be recycled in the Harrison process, it is a reasonable assumption that the bacteria are in fact separated from the metal in the supernatant, which would result in a process consistent with the instant claims. Further, with respect to instant claims 6-8, the steps as recited in the instant claims are directed to nothing more than conventional methods of storing bacteria. One of ordinary skill in the art of bioreactors would have thus been motivated to include the claimed steps in the Harrison et al. process, which requires the use of bacteria in proper amounts to carry out each bioleaching stage.

7. Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 45-51 of copending Application No. 10/444541. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the '541 claims and the instant claims are directed to a process which involves using micro-organisms to produce a metal-containing slurry, and separating the micro-organisms from the

Art Unit: 1742

remainder of the slurry. While the '541 claims do not recite the term "solid/liquid separation", it would appear that conducting the '541 process under standard conditions would in fact involve a solid-liquid separation process, i.e. both a solid and liquid phase would be present and thus the step of "separating and recovering bioproducts" in '541 claim 45 would include a step as defined in the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. In a response filed April 29, 2005, Applicant alleges that the Harrison reference does not disclose separating microbial cells from metal in the supernatant as presently claimed. The examiner's position is that one of ordinary skill in the art would realize that such a feature should be included when performing the Harrison process, for reasons as set forth in the rejection supra. The examiner notes that Applicant's perfected priority date is prior to the effective date of the previously cited WIPO '504 reference. With regard to the Burke et al reference, the rejection based on Burke is being withdrawn at


Art Unit: 1742

this time, as the prior art cited in the other rejections supra is clearly more relevant to the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. Effective October 1, 2003, all patent application related correspondence transmitted by facsimile must be directed to the central facsimile number, (703) 872-9306. On July 15, 2005, the Central FAX Number will change to 571-273-8300. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP 1700

GPW  
July 11, 2005